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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,628	01/10/2002	Joseph C. Rapuano	17561-069	8607

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Boston, MA 02111

EXAMINER
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GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 01/16/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/044,628

Applicant(s)

RAPUANO ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13-16, 18-20, and 24 are rejected under 35 U.S.C. 102(b) as anticipated by Johnston (U.S. Patent 4,875,283).

Johnston discloses a method for producing a plurality of circuit boards in a single pressing step wherein each circuit board lay-up is separated by aluminum protective sheets (the aluminum sheets having a thickness in the range from 0.127 mm to about 0.635 mm). Johnston teaches the method comprises providing a caul plate, placing an aluminum sheet on the caul plate, placing a circuit board lay-up (i.e. two conductive copper foils with a dielectric prepreg sandwiched therebetween) on the aluminum sheet, and covering the lay-up with a second aluminum sheet. Johnston teaches additional circuit board lay-ups may be placed on the first (each lay-up separated by aluminum sheets) to form a book that is pressed in a single step to laminate individual circuit-boards (Figure 6 and Column 5, lines 39-49 and Column 6, lines 13-30).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 6-8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston.

Johnston discloses a method for producing a plurality of circuit boards in a single pressing step wherein each circuit board lay-up is separated by aluminum protective sheets (the aluminum sheets having a thickness in the range from 0.127 mm to about 0.635 mm). Johnston teaches the method comprises providing a caul plate, placing an aluminum sheet on the caul plate, placing a circuit board lay-up (i.e. two conductive copper foils with a dielectric prepreg sandwiched therebetween) on the aluminum sheet, and covering the lay-up with a second aluminum sheet. Johnston teaches additional circuit board lay-ups may be placed on the first (each lay-up separated by aluminum sheets) to form a book that is pressed in a single step to

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lamine individual circuit-boards (Figure 6 and Column 5, lines 39-49 and Column 6, lines 13-30). It is noted Johnston teaches sandwiching the prepreg between copper foils and then covering with aluminum sheets as opposed to sandwiching the aluminum sheet between copper foils and then covering with prepreg. However, there is no teaching in Johnston excluding this alternative method of forming the book and both methods form identical books (i.e. circuit board lay-ups separated by aluminum sheets) such that it would have been well within the purview of one of ordinary skill in the art at the time the invention was made to form the book taught by Johnston in any suitable, experimentally determined manner as doing so would require nothing more than ordinary skill and routine experimentation with all methods forming identical books to be pressed.

6. Claims 5, 9, 11, 17, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston as applied in paragraphs 2 and 5 above, and further in view of Fisher et al. (U.S. Patent 5,942,314).

Johnston as applied above teaches all of the limitations in claims 5, 9, 11, 17, 21, and 23 except for a specific teaching on the copper foil and aluminum sources. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the copper foil and aluminum taught by Johnston from rolls of each as it was well known in the art to provide them in this manner as shown for example by Fisher et al. and only the expected results would be achieved.

Fisher et al. disclose forming a circuit board from a lay-up comprising aluminum sheet/copper foil/prepreg/copper sheet/aluminum foil wherein the aluminum sheet and copper foil are supplied from rolls of each material (Column 5, lines 23-57).

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7. Claims 9, 10, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston as applied in paragraphs 2 and 5 above, and further in view of Nagy (U.S. Patent 4,293,617).


Johnston as applied above teaches all of the limitations in claims 9, 10, 21, and 22 except for a specific teaching on the copper foil and aluminum sources. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the copper foil and aluminum taught by Johnston from a single roll as it was well known in the art to provide them in this manner as shown for example by Nagy and only the expected results would be achieved.


Nagy discloses forming a circuit board from a lay-up that includes aluminum and copper foil wherein the aluminum and copper foil are supplied as a roll of aluminum with a layer of copper deposited thereon (Column 3, lines 61-64 and Column 4, lines 30-68 and Column 5, lines 1-10).

### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is (571) 272-1216. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

  
John L. Goff  
January 14, 2004

  
JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300